Drought Status for July 2006

National Weather Service, Albuquerque, NM

Discussion: The "rainy" season for the western half of New Mexico began two weeks earlier than usual, bringing some substantial precipitation to many areas of the state between June 26 and July 9. During that period, much of New Mexico received more precipitation than during the entire year up through June 25th. Consequently, many areas that were only experiencing short-term drought have seen an improvement in conditions. However, the wet period was a bit unusual, and drier weather returned to New Mexico during the 2nd week of July. In spite of the short-term improvements, the recent precipitation didn't put much of a dent in the long-term drought situation that has lingered since 2000 in some areas.

Although the first 25 days of June were very dry over most of New Mexico, the rain at the end of the month allowed some areas to finish the month with above normal June precipitation. This was the case across good portions of climate divisions 5 (Central Valleys) and 6 (Central Highlands). However, June precipitation was well below normal over the northwest quarter of the state. The statewide average for 160 locations was 96 percent of normal, thanks to the late-month rainfall.

Table 1 shows how the recent rainfall changed percentages of normal precipitation over the past 8 months or so at some locations across New Mexico. Changes in percentages are quite dramatic at a number of locations, while the recent rainfall had much less impact on the long-term percentages (see table 2).

Some of the locations that increased approximate 8 month percentages of normal by four times or greater included: Albuquerque from 12 to 72 percent of normal, Bernardo (6 to 54 percent), Carrizozo (16 to 64 percent), Gran Quivira (7 to 48 percent), Moriarty (22 to 107 percent), Socorro (7 to 46 percent), and Truth or Consequences (8 to 33 percent). Changes were generally smallest in the southeast part of the state, and Ramon actually saw a decrease from 28 to 26 percent of normal. Percentages 40 or less are shown in bold font in table 1.

Table 2 shows the percentages of normal precipitation over (approximately) the past 60 months. The recent wet period hasn't changed these percentages very much. Greatest changes included: Albuquerque (from 94 to 99 percent), Carrizozo (from 87 to 94 percent), Clayton (96 to 101 percent), Johnson Ranch (87 to 93 percent), and Moriarty (86 to 91 percent). Percentages 85 or less are shown in bold font in table 2.

Water-year precipitation for New Mexico (October 1, 2005 through June 30, 2006) has averaged 55 percent of normal. The range is from 45 percent of normal in climate division 5 (Central Valleys) to 66 percent of normal in climate division 6 (Central Highlands). Through the end of June, calendar year precipitation also averaged 55 percent of normal for the state. This ranged from 33 percent of normal in the climate division 5 (Central Valley) and 35 percent in climate division 8 (Southern Desert) to 58 percent in climate divisions 2 (Northern Mountains) and 7 (Southeast Plains).

Location	Nov 05-May 2006 Precip.	Normal	%Norm.	Nov 2005-Jul 9 2006 Precip.	Normal	%Norm.
Abbott	2.01	4.57	44%	5.64	7.33	77%
Albuquerque	0.41	3.40	**12%**	3.23	4.47	72%
Amistad	2.11	5.77	**37%**	5.71	8.50	67%
Animas	0.41	3.60	**11%**	1.56	4.77	**33%**
Artestia	0.88	3.96	**22%**	2.65	5.93	45%
Augustine	0.60	3.15	**19%**	3.34	4.43	75%
Aztec Ruins	2.57	5.12	50%	3.99	5.88	68%
Bell Ranch	1.67	4.98	**34%**	5.01	7.77	64%
Bernardo	0.15	2.49	**6%**	1.87	3.45	54%
Bloomfield	1.93	4.15	47%	3.76	4.90	77%
Bosque del Apache	0.23	2.68	**9%**	1.31	3.80	**34%**
Capitan	1.49	5.32	**28%**	6.03	7.85	77%
Carlsbad	1.71	4.01	43%	4.30	6.08	71%
Carrizozo	0.71	4.47	**16%**	3.95	6.17	64%
Chama	5.06	11.33	45%	7.64	13.07	58%
Cimarron	1.68	6.06	**28%**	3.08	8.74	**35%**
Clayton	2.10	5.86	**36%**	7.30	8.61	85%
Cloudcroft	4.09	8.77	47%	10.39	12.34	84%
Corona	0.82	5.83	**14%**	4.81	9.33	52%
Clovis	2.51	5.80	43%	5.31	9.34	57%
Deming	0.63	2.95	**21%**	2.16	4.04	54%
El Rito	2.10	5.23	**40%**	4.58	6.60	69%
Farmington	1.98	4.36	45%	3.06	4.89	63%
Fence Lake	3.00	6.13	49%	4.50	7.43	61%
Fort Sumner	0.90	4.92	**18%**	3.37	7.18	47%
Gallup	1.77	5.46	**32%**	4.00	6.46	62%
Gascon	3.12	9.65	**32%**	8.73	13.00	67%
Gila Hot Springs	1.32	6.17	**21%**	3.66	7.71	47%
Gran Quivira	0.37	5.17	**7%**	3.41	7.14	48%
Grants	1.13	3.73	**30%**	2.78	4.89	57%
Jemez Springs	1.02	7.04	**14%**	3.92	9.11	43%
Johnson Ranch	1.17	4.60	**25%**	4.72	5.78	82%
Las Cruces	0.58	2.81	**21%**	1.31	3.95	**33%**
Las Vegas	2.35	5.62	42%	5.83	8.73	67%
Lordsburg	1.18	4.12	**29%**	2.18	5.14	42%
Los Alamos	1.61	6.64	**24%**	4.97	9.17	54%
Luna	2.72	5.80	47%	4.72	7.45	63%
Moriarty	0.85	3.90	**22%**	6.01	5.60	107%
Navajo Dam	3.30	7.45	44%	5.18	8.43	61%
Portales	2.43	5.46	45%	5.30	8.71	61%
Quemado	1.16	3.72	**31%**	2.87	4.93	58%
Ramon	1.17	4.19	**28%**	1.68	6.41	**26%**
Raton	2.42	6.70	**36%**	4.80	9.72	49%
Red River	8.23	9.84	84%	11.46	12.24	94%
Reserve	2.31	6.36	**36%**	4.84	7.76	62%
Roswell	0.94	4.33	**22%**	2.10	6.51	**32%**
Ruidoso	2.35	7.64	**31%**	6.51	10.92	60%
Santa Fe	1.20	5.53	**22%**	4.70	7.38	64%
Santa Rosa	1.46	4.82	**30%**	3.76	7.15	53%
Silver City	0.82	6.10	**13%**	2.89	7.68	**38%**
Socorro	0.23	3.34	**7%**	2.03	4.44	46%
Star Lake	1.22	3.44	**35%**	3.27	4.46	73%
Taos	1.41	5.50	**26%**	1.31	6.94	53%
Tatum	2.34	5.13	46%	3.66	7.96	70%
Truth or Consq	0.31	3.86	**8%**	1.82	5.45	**33%**
Tucumcari	2.13	5.89	**36%**	6.46	8.70	74%
Tularosa	0.56	3.44	**16%**	1.61	4.68	**34%**
Zuni	1.78	5.24	**34%**	3.55	6.30	56%

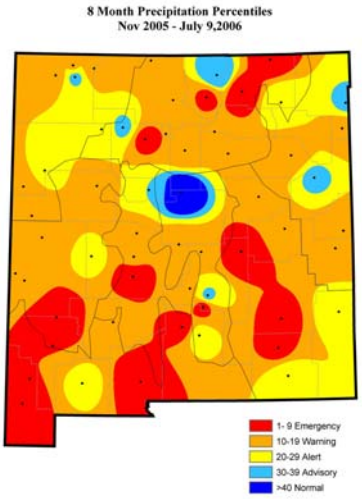
Location	Jun 2001-May 2006 Precipitation	Normal	%Normal	Aug 2001-Jul 9 2006 Precip.	Normal	%Normal
Abbott	70.29	74.60	94%	68.27	72.73	94%
Albuquerque	41.06	43.45	94%	42.25	42.55	99%
Amistad	78.23	77.05	102%	79.07	75.33	105%
Animas	44.57	54.60	**82%**	42.74	53.18	**80%**
Artestia	57.58	58.90	98%	57.88	57.80	100%
Augustine	56.83	56.05	101%	56.07	54.56	103%
Aztec Ruins	45.02	49.50	91%	45.62	48.85	93%
Bell Ranch	72.74	73.90	98%	70.62	72.13	98%
Bernardo	36.67	41.20	89%	36.49	40.35	90%
Bloomfield	37.92	43.55	87%	38.70	42.86	90%
Bosque del Apache	42.43	43.40	98%	41.52	42.58	98%
Capitan	68.85	80.70	**85%**	69.38	78.68	88%
Carlsbad	57.06	62.30	92%	57.98	61.06	95%
Carrizozo	55.60	63.60	87%	58.28	62.05	94%
Chama	94.74	105.00	90%	95.10	103.49	92%
Cimarron	75.50	80.85	93%	73.21	79.07	93%
Clayton	74.33	77.50	96%	76.74	75.78	101%
Cloudcroft	124.70	124.80	100%	121.72	121.31	100%
Corona	84.34	89.45	94%	84.32	87.67	96%
Clovis	88.45	89.40	99%	88.13	87.61	101%
Deming	38.33	46.00	**83%**	38.15	44.74	**85%**
El Rito	56.81	61.10	93%	56.21	59.99	94%
Farmington	36.75	43.35	**85%**	36.98	42.72	87%
Fence Lake	64.11	71.25	90%	64.52	69.74	93%
Fort Sumner	67.77	72.30	94%	68.17	70.74	96%
Gallup	47.57	57.95	**82%**	48.13	56.90	**85%**
Gascon	113.08	119.25	95%	113.42	116.46	97%
Gila Hot Springs	64.91	81.70	**79%**	64.47	79.80	**81%**
Gran Quivira	70.76	75.80	93%	71.92	74.02	97%
Grants	40.34	53.00	**76%**	38.94	51.84	**75%**
Jemez Springs	58.16	86.45	**67%**	58.04	84.63	**69%**
Johnson Ranch	49.42	56.65	87%	51.91	55.54	93%
Las Cruces	41.39	46.70	89%	40.77	46.70	89%
Las Vegas	76.49	95.20	**80%**	76.05	93.06	**82%**
Lordsburg	47.49	51.90	92%	46.16	50.69	91%
Los Alamos	70.88	91.65	**77%**	70.94	89.51	**79%**
Luna	70.60	79.10	89%	67.62	77.18	88%
Moriarty	53.79	62.70	86%	55.87	61.10	91%
Navajo Dam	54.51	67.05	**81%**	55.68	66.23	84%
Portales	75.01	83.70	90%	75.58	81.87	92%
Quemado	51.44	54.25	95%	52.16	52.87	99%
Ramon	54.83	64.20	**85%**	53.92	62.82	86%
Raton	80.49	88.30	91%	77.50	86.36	90%
Red River	106.22	102.65	103%	105.54	100.61	105%
Reserve	64.92	78.85	**82%**	64.77	77.32	**84%**
Roswell	52.37	64.65	**81%**	52.77	63.32	**83%**
Ruidoso	91.65	109.25	**84%**	91.32	106.57	86%
Santa Fe	50.83	68.50	**74%**	52.13	67.05	**78%**
Santa Rosa	70.19	70.85	99%	68.84	69.26	99%
Silver City	65.34	79.60	**82%**	62.28	77.82	80%

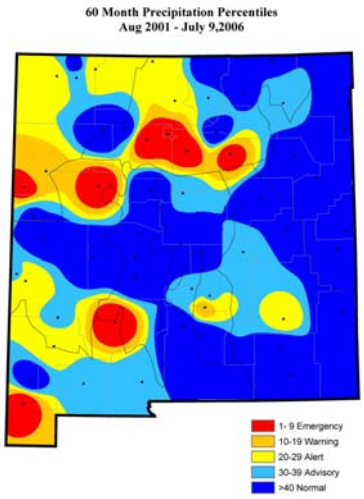
Socorro	43.07	48.00	90%	42.73	46.97	91%
Star Lake	43.98	46.35	95%	45.02	45.44	99%
Taos	53.35	60.75	88%	53.75	59.65	90%
Tatum	79.88	79.70	100%	82.49	78.03	106%
Truth or Consq	36.27	60.40	**60%**	35.92	59.07	**61**%
Tucumcari	83.42	79.75	105%	85.32	77.97	109%
Tularosa	47.01	49.05	96%	47.44	47.97	99%
Zuni	44.84	61.00	**74%**	44.81	59.71	**75**%

Table 2

One way to assess short and long-term drought is to look at the precipitation percentiles. In general, percentiles provide a good measure of how rare conditions are. Percentiles greater than 50 indicate the area has been wetter than average. Drought is associated with the lower percentiles. Percentiles less than the 11th are usually associated with "Emergency" designations in New Mexico. Percentiles from 11th to 20th are consistent with drought "warning" designations. The 21st to 30th percentiles are associated with drought "alerts," and the 31st to 40th percentiles are consistent with "heads up" advisories.

Figures 1 and 2 depict these precipitation percentiles for the worst short-term (approximately 8 months) and long-term (approximately 60 months) conditions in New Mexico. Figure 3 is a 70:30 blend of the other two figures, to give weight to the dryness over the past winter and spring, and to provide consistency with the state assessment over the past few months.





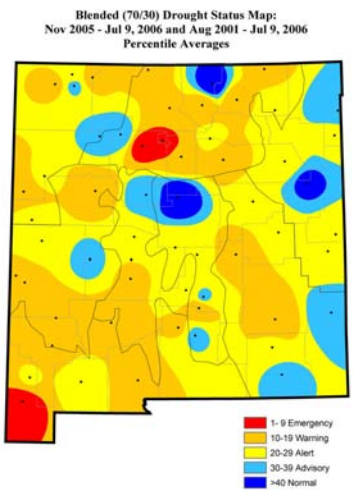


Fig 1 Fig 2 Fig 3

While emergency (red) short-term drought covered nearly the entire state in June, the recent rainfall has improved short-term conditions over most of northern and central New Mexico. Although some emergency short-term conditions still exist over northern New Mexico, figure 1 shows most of the worst short-term conditions are now concentrated over southern New Mexico. Meanwhile (fig 2), worst long-term drought conditions remain established over the northern mountains, the far west, and portions of south and southwest New Mexico.

Unseasonably-warm conditions in June and over the previous 12 months have also exacerbated drought conditions through increased evaporation and stress on vegetation. Figures 4 and 5 show the National Climatic Data Center (NCDC) rankings by state for the month of June, and for the July 2005 through June

2006 period. June was the 7th warmest of record, and the July 2005 through June 2006 period was the warmest 12 month period on record in New Mexico.

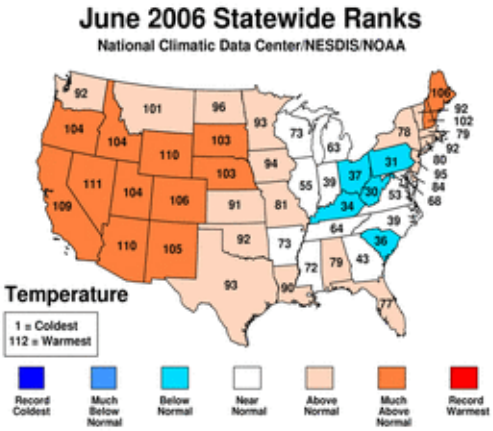


Fig 4

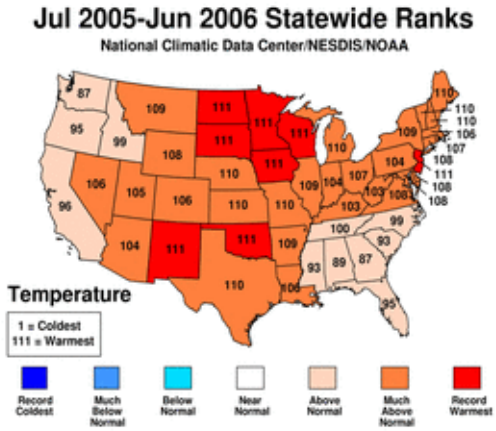


Fig 5

Rangeland/Pasture conditions: As of July 9, 70 percent of the range and pasture land was considered to be in poor or very poor condition. This is down 9 percent due to the late June and early July rainfalls, but shows a very substantial deterioration when compared to last year. At this time in 2005, only 22 percent of the range and pasture land was considered to be in poor or very poor condition. In mid July, the USDA assessment determined soil moisture was short or very short over 74 percent of the land. This is down from 94 percent in mid June but much higher than the 46 percent last year at this time. Moisture was considered to be adequate or surplus over 26 percent of the area.

Fire Danger Impacts: Recent rainfall and higher humidity reduced fire danger over much of New Mexico. However, there will be periods of relatively dry weather over the remainder of the summer in which fire danger will increase from time to time. Late June and early July rainfall was not substantial enough or widespread enough to lower fire danger for the entire summer.

Hydrologic Impacts: The wet period of late June and early July has improved storage in many small ponds and storage systems but didn't impact larger systems too much. At the end of June, NRCS reported storage was still near normal at Abiquiu (101 percent of normal), Costilla (94%) and Navajo (103%) reservoirs. This is mainly due to the excessively-wet period in late 2004 and early 2005. Elsewhere, Avalon (87%) and Brantley (81%) were a bit below normal. Heron (60%), El Vado (55%) and Sumner (54%) were below normal, and Santa Rosa (36%), Conchas (34%) and Elephant Butte (17%) were well below normal. Unless Elephant Butte receives heavy inflow during the summer, the lake level will likely drop between 5 and 10 percent of normal by September, or near the level last experienced in late 1971.

Long-range outlook:
Average summer precipitation for the 10 leanest snow pack years since 1950 has been 110 percent of normal, ranging from 116 percent of normal in the southwest to 106 percent of normal in the northeast. However, the last two poor snow pack seasons (2000 and 2002) were followed by normal to below normal precipitation. The lean snow pack might favor a wetter than normal summer, while the trends of recent summers might favor a drier than normal summer. At this time, the most likely scenario for precipitation for the June through August period is for precipitation to be close to normal. It would not be unusual for the result to depend on whether or not one or two tropical systems from either the Pacific or Atlantic impact the state.

Table 3 shows the year to date and calendar year precipitation for a number of locations in New Mexico (through June).

Calendar Year 2006 and Water Year 2006 (Oct thru Jun) Precipitation for New Mexico

National Weather Service Albuquerque, NM

	2006 (Jan - Jun)			Water Year 2006 (Oct 05 through Jun 06)			
Location	**Obs**	**Normal**	**%Normal**	**Obs**	**Normal**	**% Normal**	**SID**
Northwest Plateau							
AZTEC RUINS N/M	2.36	4.05	58%	4.97	6.66	75%	AZT
FENCE LAKE	3.05	4.75	64%	3.96	8.00	50%	FCK
FARMINGTON AG CTR	2.06	3.29	63%	3.14	5.51	57%	FAR
GALLUP FAA APRT	1.67	4.21	40%	2.11	6.99	30%	GUP
LINDRITH 2SE	2.06	5.78	36%	4.53	8.99	50%	LDR
NAVAJO DAM	3.07	5.66	54%	6.42	9.26	69%	BLN
Northern Mountains							
ALCALDE	1.57	3.40	46%	2.55	5.50	46%	ALC
CANJILON R/S	4.01	6.14	65%	6.56	9.31	70%	CJL
CERRO	3.48	4.87	71%	6.33	7.35	86%	CRR
CHAMA	6.12	9.19	67%	9.49	14.03	68%	CHM
CIMARRON 4SW	2.00	6.84	29%	3.10	9.00	34%	CPS
GHOST RANCH	2.70	4.36	62%	4.44	6.53	68%	AIQ
JEMEZ SPRINGS	2.19	6.33	35%	3.05	9.79	31%	JEM
JOHNSON RANCH	3.44	3.90	88%	4.10	6.30	65%	CUB
LAS VEGAS FAA APRT	3.12	5.80	54%	3.94	8.12	49%	LVS
LOS ALAMOS	3.31	6.38	52%	4.50	9.62	47%	LOA
RATON FILTER PLT	3.39	7.51	45%	4.93	9.90	50%	RRT
RED RIVER	8.67	8.90	97%	12.48	12.73	98%	RED
SANTA FE 2	1.69	5.12	33%	3.32	7.86	42%	STF
WOLF CANYON	5.66	9.07	62%	7.42	14.04	53%	CUA
Northeastern Plains							
CLAYTON APRT	2.93	6.90	42%	3.50	8.86	40%	CAO
CLOVIS	4.12	7.24	57%	5.71	10.14	56%	CLV
CONCHAS DAM	4.19	5.38	78%	4.56	7.42	61%	CNC
MOSQUERO 1NE	2.52	6.54	39%	3.20	8.69	37%	MSQ
PORTALES	4.08	6.62	62%	5.47	9.16	60%	POR
TUCUMCARI 4NE	3.85	6.58	59%	4.41	9.06	49%	TUC
Southwestern Mountains							
FORT BAYARD	2.06	4.05	51%	4.17	7.14	58%	FTB
GILA HOT SPRINGS	1.80	4.37	41%	3.96	8.34	47%	GHS
GRANTS APRT	1.12	3.09	36%	1.71	5.45	31%	GNT
QUEMADO ESTATES	1.80	4.19	43%	2.93	6.84	43%	QME
RESERVE R/S	3.34	4.62	72%	4.40	8.74	50%	RES
Central Valley							
ABQ WSFO APRT	1.45	3.09	47%	2.58	4.92	52%	ABQ
BOSQUE DEL APACHE	0.30	2.48	12%	1.80	4.38	41%	SAA
LOS LUNAS 3SSW	1.22	2.71	45%	2.44	4.78	51%	LLU
SOCORRO	0.75	2.93	26%	1.79	4.94	36%	SCR
Central Highlands							
CAPITAN	3.28	5.59	59%	5.41	7.82	69%	CAP
CLOUDCROFT	7.12	7.97	89%	9.32	12.22	76%	CLD
ESTANCIA 4N	1.64	4.14	40%	3.14	6.56	48%	EST

MOUNTAINAIR R/S	2.66	4.76	56%	4.01	7.51	53%	MTN
RUIDOSO 2NNE	4.68	7.12	66%	7.84	11.14	70%	RUP
Southeastern Plains							
ARTESIA 6S	2.47	4.44	56%	3.30	6.54	50%	ART
CARLSBAD	4.20	4.45	94%	5.23	6.80	77%	CWP
FORT SUMNER	2.40	5.20	46%	3.24	7.75	42%	FSM
ROSWELL CLIMAT	2.08	4.75	44%	3.37	7.04	48%	ROW
SANTA ROSA	2.86	5.26	54%	3.38	7.54	45%	SNR
TATUM	3.47	6.09	57%	5.09	8.63	59%	TAT
Southern Desert							
ANIMAS	0.73	2.57	28%	2.66	5.03	53%	ANM
DEMING	0.82	2.26	36%	1.91	4.18	46%	DEM
FAYWOOD	0.78	2.82	28%	2.23	5.57	40%	FAY
STATE U LAS CRUCES	0.81	2.25	36%	2.38	4.34	55%	STC
TRUTH OR CONSEQ	1.23	2.79	44%	2.55	6.11	42%	TRC
TULAROSA	1.16	3.00	39%	2.39	5.07	47%	TLR

	2006 (Jan - Jun)	**Water Year 2006 (Oct 05 through Jun 06)**
Climate Division	**% Nrml**	**% Nrml**
Northwest Plateau	51%	55%
Northern Mountains	58%	59%
Northeastern Plains	55%	50%
Southwestern Mountains	50%	47%
Central Valley	33%	45%
Central Highlands	66%	66%
Southeastern Plains	58%	53%
Southern Desert	35%	47%
All Divisions	55%	55%

Table 3